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Political Deliberation, Interest Conflict, and the Common Knowledge Effect

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Abstract

Deliberation depends on the ability of deliberators to learn from each other through the exchange of information. However, the Common Knowledge Effect (CKE) finding, a well-established phenomenon affecting small-group discussion, shows that when people talk in groups they tend to ignore novel information and instead discuss commonly known information; things that everyone knew before discussion started. Some theorists have worried that the CKE makes small group discussion - one of the most common features of recent democratic innovations - a poor tool for making deliberative democracy a reality. However, most research on the CKE is limited to situations where group members share a common goal or interest, while political deliberation generally happens in situations where citizens have at least some conflicting interests. This paper looks for evidence of the CKE in two group-discussion experiments where subjects had partially conflicting interests, ultimately finding no evidence of this effect. Scholars of deliberation frequently view conflicting interests as an obstacle to the success of deliberation; this result suggests that conflicting interests may, in fact, enhance deliberation by reducing the overreliance on commonly-known information.

Author Biography

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Keywords

deliberation, information, group discussion, hidden profile, common knowledge effect

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Deliberative theorists and practitioners claim that deliberative political institutions can produce higher quality and more legitimate public policy. To a large degree, this claim depends on the ability of deliberators to learn from each other through the exchange of information. In the words of Seyla Benhabib, “New information is imparted because 1) no single individual can anticipate and foresee all of the variety of perspectives through which matters of ethics and politics would be perceived by different individuals; and 2) no single individual can possess all of the information deemed relevant to a certain decision affecting all. Deliberation is a procedure for being informed” (1996, p. 71). This sentiment is echoed by a variety of other practitioners and theorists (e.g. Gutmann & Thompson, 1996; Warren & Gastil, 2015). Without the aggregation of information, then, deliberation may not deliver the practical and normative benefits that its advocates claim for it.

But does deliberation actually produce information aggregation? The primary way that deliberative institutions encourage information aggregation is through group discussion (Myers & Mendelberg, 2013). However, a large literature in psychology finds that groups spend most of their time discussing commonly known information, that is, information that all members of the group knew before discussion began. Uncommonly known information, the very information that theorists hope will come to light through group discussion, tends to be ignored in discussion, and to have much less influence over group decisions than commonly known information (see Lu, Yuan, & McLeod, 2012 for a review). This is true even when the uncommonly known information is important for the group’s task. This focus on commonly known information is known as the Common Knowledge Effect (henceforth CKE) (Stasser & Titus, 1985; Gigone & Hastie, 1993).¹

Given the important role that information aggregation plays in deliberative democracy it is not surprising that a number of scholars have cited the CKE as a

¹ This effect is also referred to as the “bias for shared information” or more generally as “information sharing bias;” the literature that explores it is also commonly referred to as the “hidden profile” literature. In most studies which find a Common Knowledge Effect, information is distributed to subjects such that the option favored by the totality of the information is not favored by the information known by any one individual. This creates a “hidden profile” of information supporting the objectively best choice, one that is unlikely to be discovered because of the focus on commonly known information - thus the problem of hidden profiles can be said to be caused by the CKE. I use more general term “Common Knowledge Effect” instead of the more popular “hidden profile” because deliberative democrats may be interested in situations the CKE degrades the quality of deliberation even in the absence of a fully hidden profile.

serious problem for deliberative institutions, particularly those like Citizens' Juries, National Issues Forums, and Deliberative Polls that rely heavily on small group discussion (Ryfe, 2005; Carpini, Cook, & Jacobs, 2004; Mendelberg, 2002; Sunstein, 2006). Mendelberg (2002) summarizes the threat posed by the CKE finding to democratic deliberation by noting that if "discussion fail[s] to bring out the unique perspective of each person and to promote better exchange of information of critical importance to the group's decision," then "on the issues that matter in deliberative democracy, two heads are not better than one" (p. 176-177). Sunstein (2006) cites the CKE as one of the "Four Big Problems" facing democratic deliberation saying "deliberating groups often perform poorly because they fail to elicit information that could steer them in the right directions" (p. 88). These problems lead Sunstein (2006), among others (e.g. Klemp & Forcehimes, 2010; Meirowitz, 2006), to recommend that theorists explore alternatives to small group discussion as a way to aggregate information in deliberative democracy.

However, authors like Sunstein may be too quick to abandon group discussion. While the CKE has been frequently replicated by psychologists, these experiments do not include a common feature of political deliberation: conflicting interests. In nearly all existing experiments in the CKE literature deliberators have only a common interest in the outcome of discussion; that is, all have the same goal. This assumption of common interests may be reasonable for studying group discussion in non-political settings. However, in most political discussions deliberators bring conflicting as well as common interests to the table. These conflicting interests may be driven by material concerns, but may also be the product of conflicting values or ideologies that are unlikely to be resolved through deliberation (Mansbridge et al., 2010). Regardless of the source, this interest conflict sets political deliberation apart from other forms of group discussion where discussants can be presumed to be primarily motivated by a common interest. Despite this, the existing literature does not test whether the CKE affects group discussion when interest conflict is present.

In this paper we draw on data from two experiments to look for evidence of the CKE in group discussion with partially conflicting interests. In both, we randomly assign some information to be commonly known and some to be uncommonly known in groups of deliberators with conflicting interests, and then examine whether the information that is randomly assigned to be commonly known is more

influential than the information that is randomly assigned to be uncommonly known. We find no evidence that uncommonly known information is less influential than the same information when it is commonly known. These results suggest that conflicting interests can mitigate the CKE, making it less of a problem for political deliberation than some theorists fear.

This finding has important implications for the design and facilitation of deliberative mini-publics. Conflict is often seen as an obstacle, and some facilitation strategies try to minimize conflict by focusing on common values and shared interests. While there are undeniable dangers to open conflict in deliberative groups, the lack of conflict could result in deliberating groups failing to discuss important information. Managed properly through skilled facilitation, conflicting interests may be a resource for deliberation.

The Common Knowledge Effect

Most group discussions feature commonly known information, things that everyone knows before discussion begins, and uncommonly known information, things that only one or perhaps a few people know before discussion begins. Such uncommonly known information might include technical knowledge, personal experiences, or the perspectives of minority groups. We might hope that groups would mostly discuss uncommonly known information so that by the end of a discussion all relevant information is “out on the table” and incorporated into group decisions. The CKE literature demonstrates that this is not the case. Instead of learning from each other’s novel information, groups tend to spend most of their time discussing commonly known information; information that is commonly known also has greater influence over post-discussion beliefs and over group decisions than the same information when it is uncommonly known (Gigone & Hastie, 1993).

This effect was first noted by Stasser and Titus (1985), who presented groups of students with information about three candidates for student body president. This information indicated that one candidate, A, was clearly the superior candidate; however, each positive item of information about A was only known by one person before discussion began, while all of the positive information about the other candidates was known by all discussants. Thus, all members of the group would

enter discussion thinking that candidate A was the worst candidate, but through the sharing of information the group could eventually realize that candidate A was, in fact, the most qualified. Despite this, discussion actually decreased support for candidate A. Stasser and Titus (1985) ascribe this to a psychological tendency to focus on information that is commonly known before discussion. This finding has produced a prodigious literature that has replicated the CKE finding (see Lu, Yuan, & McLeod, 2012 for a meta-analysis), and has found the effect to be robust to a number of variations in the discussion setting such as group size (Cruz, Boster, & Rodríguez, 1997), whether the task has a clear correct answer (Stasser & Stewart, 1992), and the time dedicated to discussion (Parks & Cowlin, 1995). However, some factors have been shown to reduce or eliminate the CKE including publicly identifying group members who know additional information (Stasser, Vaughan, & Stewart, 2000).

Interest Conflict and the Common Knowledge Effect

Despite this apparent robustness, more recent work questions the ubiquitousness of the CKE. In particular, studies of the effect of dissenting opinions on the CKE suggest that this effect may be an artifact of the particular conditions created by the canonical CKE design (Curşeu, Schrujjer, & Boroş, 2012; Greitemeyer, Schulz-Hardt, Brodbeck, & Frey, 2006; Mojzisch, Grouneva, & Schulz-Hardt, 2010; Schulz-Hardt, Brodbeck, Mojzisch, Kerschreiter, & Frey, 2006). In these studies, groups share a common goal, but group members have different opinions about how to achieve this common goal. Schulz-Hardt et al. (2006), for example, conduct a CKE experiment where groups were tasked with hiring an airline pilot. The experimenters solicited subjects' pre-discussion opinions about which candidate they thought was best and then randomly assigned subjects to homogeneous groups, where all subjects agreed about which job candidate was best, or heterogeneous groups, where at least one subject preferred a different job candidate from the rest of the group. They found that heterogeneous groups spent more time discussing uncommonly known information, and made higher quality decisions.

The fact that the presence of dissenting opinions about how to achieve a shared goal reduces the CKE brings into question the generalizability of the CKE finding. However, most political deliberation features at least some disagreement about basic goals, not just dissenting opinions about how to reach a shared goal. We refer

to this disagreement about the group's goals as conflicting interests. Interests are preferences or goals for the outcome of deliberation that are not themselves likely to be revised through the process of deliberation. These include material self-interest and group-interests, but also goals produced by ideology, altruism, religious beliefs, or other sources of political beliefs that are generally not "up for debate," at least within the scope of the time-constrained deliberation that takes place in most mini-publics (Mansbridge et al., 2010). Importantly, we do not take a position in the normative debate about whether the goal of deliberation should be to eliminate these conflicting interest, but merely note that as an empirical matter political deliberation usually involves these kinds of interests and thus that determining whether psychological phenomena like the CKE apply to political deliberation requires taking these interests into account.

In contrast to most political deliberation, where citizens have some interests in common and some in conflict, studies in the CKE tradition are intentionally designed such that all subjects have only common interests in the outcome of deliberation.² Several aspects of the canonical CKE study design ensure this common interest. Decisions are presented as choosing "the best" option. In general, these decisions are areas where subjects have little grounds for disagreement about what constitutes the best choice (e.g. hiring an airline pilot as in Schulz-Hardt et al., 2006) or where the descriptions of different options are pre-tested so that they are perceived as uniformly positive or negative by the population from which subjects are drawn. Finally, subjects in these studies are not incentivized to favor one option over the other. Importantly, this is true even in CKE studies with pre-discussion dissent. In such studies, dissent represents disagreement over how to achieve a common interest or goal, as opposed to disagreement produced by conflicting interests or goals.

Thus, it is not clear whether the canonical CKE finding applies to groups whose members have conflicting as well as common interests, or whether the factors that allow dissenting opinions to reduce or eliminate the CKE will lead conflicting interests to do the same. Recent theoretical work accounts for the dissent finding by reconceptualizing information use in groups as a motivated process (De Dreu, Nijstad, & van Knippenberg, 2008; Wittenbaum, Hollingshead, & Botero, 2004).

² Though see Toma and Butera (2009).

According to these theories, dissenting opinions increase a group's epistemic motivations because the lack of consensus provides group members a reason to reconsider their pre-discussion opinions. This increased epistemic motivation in turn reduces the CKE. However, when group members have different goals dissent may not trigger increased epistemic motivation because disagreement can be attributed to having different goals, not to uncertainty about how to meet a shared goal. Thus, while the presence of conflicting interests is an important difference between most political deliberation and the classic CKE paradigm, whether this difference will reduce or eliminate the CKE is an open question.

Hypotheses

To address this gap, we examine data from two group discussion experiments where subjects have a combination of common interests and conflicting interests in the outcome of deliberation and where some decision-relevant information was uncommonly known. We test two hypotheses based on the canonical CKE finding:

H1: Uncommonly known information will be less influential than the same information that is commonly known.

H2: Groups where some information is uncommonly known will make lower quality decisions than groups where all information is commonly known before discussion begins.

Finding support for these hypotheses would suggest that the CKE affects deliberating groups whose members hold partially conflicting interests in the outcome of deliberation. Failing to support these hypotheses, on the other hand, would suggest that the CKE does not affect deliberation when deliberators have conflicting interests.

Study 1

This paper tests these hypotheses using data from two experiments. Study 1 is a laboratory experiment where subjects were placed in groups of three that were tasked with making a decision that had two possible options. Subjects were incentivized to have two interests in the decision: a common interest in choosing

the correct option, and a conflicting interest in choosing the option they “leaned” towards regardless of whether it was the correct option. The decision was described in a vignette; the vignette did not say for certain which option was correct, but included two items of information that predicted which option would be correct with some uncertainty. Each of these predictive items clearly favored one of the two options. These predictive items were presented alongside several items of neutral information that did not clearly favor either option. Groups were randomly assigned to one of three conditions which varied whether the second of these items was commonly known and, in groups where the item was not commonly known, whether the rest of the group was forewarned about which group member knew the item. We test this paper’s hypothesis by looking at whether uncommonly known information was less influential than commonly known information, and whether group performance was lower in groups where one item of information was uncommonly known than in groups where both items were commonly known.³

Method

Experimental Design

Subjects were 117 undergraduate students recruited through the subject pool of a non-deception laboratory at a northeastern research university. Subjects were paid a ten dollar show-up fee, plus an additional payment that depended on the outcome of one group discussion, as described below. Subjects were placed into groups of three.

Each group was tasked with deciding between two options, described in brief vignettes passed out to each group member prior to discussion. Subjects knew that one of the two options would turn out to be the correct option. Each group’s vignettes contained two items of information that were predictive of which option would turn out to be correct. Subjects were told that this information was predictive of which option would turn out to be the correct decision, though not perfectly so; each item included information about how predictive it was.

³ This experiment contained an additional manipulation, the results of which are reported in Myers (2017). In this manipulation, the interest of the subject who knew the uncommon item of information before deliberation began was randomly assigned to be either in the majority or minority in terms of his or her interest. There was no interaction effect between this and the manipulation analyzed in the present paper, so in all analyses we ignore this majority-minority manipulation.

Groups were randomly assigned to one of three experimental conditions that were created by varying the pre-discussion distribution of information within the group. In the *Common Information* condition all three subjects' vignettes contained both predictive items of information that were predictive of the final outcome. In the *Uncommon Information* condition, all three subjects' vignettes contained the first item of information (henceforth the commonly known item) while only one subject's vignette contained the second item of information (henceforth the uncommonly known item). A final experimental condition builds on Stasser, Vaughan, and Stewart (2000)'s finding that the CKE can be eliminated by publicly identifying the group member who knows the unshared information and the type of information they know, although not the content of that information. In this condition, the *Expert Identified* condition, the distribution of information was identical to the *Uncommon Information* condition; however, the subject whose vignette contained the uncommonly known information was identified at the start of discussion, though the content of the information was not disclosed to the other deliberators.

To ensure that any results were not an artifact of one item of information being more convincing than the other or one option being more attractive than the other, we randomly assign the option favored by each item of information for each group. This means that in half of all groups both items favored the same option while in half of all groups the commonly known item favored one option and the uncommonly known item the other option.⁴ As discussed below, this requires analyzing groups where both items favor the same option and groups where the two items favor different options separately – however, our hypotheses for each situation are the same.⁵

In all groups, subjects had partially conflicting interests, which were created using cash incentives. These incentives were structured so that all subjects had

⁴ Or, in the case of the *Common Information* condition, the two commonly known items favored different options.

⁵ It is possible that groups where both items favored different options had more dissenting opinions, and thus that a failure to find evidence of the CKE in such groups might be the result of dissenting opinion rather than interest conflict. In practice, we find substantively similar results regardless of whether the group had two items of information favoring the same option or two items favoring different options.

an interest in common, but also a non-common interest that conflicted with the non-common interest of at least one other deliberator. Specifically, all subjects earned \$10 if their group chose the option that turned out to be the correct option. However, each subject was told that they “leaned” towards one of the two options. Subjects earned \$5 if the group chose the option that the subject leaned towards, regardless of whether that was the correct option. These payoffs are summarized in Table 1. In each group, one subject was randomly assigned to lean towards one option and two subjects were assigned to lean towards the second option, creating interest conflict within each group.

Group Choice	Earnings
Group Choice Correct and Matches Subject’s Leaning	\$15
Group Choice Correct and Does Not Match Subject’s Leaning	\$10
Group Choice Incorrect and Matches Subject’s Leaning	\$5
Group Choice Incorrect and Does Not Match Subject’s Leaning	\$0

Table 1: Group Outcomes, Subject Leanings, and Subject Payments

Decision Tasks

The experiment employed three different decision tasks. In the first, subjects were told that they were part of a political club that was deciding which of two candidates to endorse in an upcoming election, with the goal of endorsing the candidate that would go on to win the election. In the second, subjects were told that they were part of a town council that had to decide between two snow plow contractors, with the goal of hiring the high-quality contractor if the coming winter would bring a large amount of snow and the low-price contractor otherwise. In the third scenario, subjects were told that they were part of a town council who had to decide whether to expand the town’s water treatment plant, with expansion being the correct decision if and only if a local manufacturer went on to expand their factory. Appendix A describes all of the decision tasks and includes the text of the briefing materials that subjects received.

Figure 1 shows an example of the background information that subjects read prior to discussion; this example is drawn from the candidate endorsement task. In this example, the first (commonly known) and second (uncommonly known) item, which are bolded in this example though not in the text given to subjects, were placed in the neutral biographies of the two candidates. In this example, each of

the items favors a different candidate. The first item says that Tom Davies has raised more money so far. The second item says that Mark Jones is going to receive the endorsement of the area's primary newspaper. Each item includes information indicating how reliable it is as a predictor of the election outcome; both are strongly predictive, but not determinative of the final outcome.

This example shows how the background information would appear for the subject who was assigned to know the second item of information in the *Uncommon Information* or *Expert Identified* conditions. For others in these conditions the second item was replaced with a statement that the information was unknown, but that if it were known it would have a particular predictive value. In the case shown in Figure 1, the information provided to the other subjects would read:

The endorsement of the Springfield Shopper, the highest circulation daily news- paper that reaches about three quarters of the county's population, has not yet been decided. The candidate receiving this endorsement has won in two of the last three elections for county commissioner.

In the Common Information condition, all subjects were provided with both pieces of information.

Procedure

Nine subjects participated in each session. Sessions were divided into three rounds. At the start of each round, subjects were randomly divided into three three-person groups using an absolute stranger matching procedure, meaning that no two subjects were ever in the same group together more than once. In each round subjects discussed a different decision task, with the order of decision tasks randomized across sessions. Each group was randomly assigned to one of the three experimental conditions designed above.

Within each group, an experimenter randomly assigned each subject to lean towards one of the two options and, in the *Uncommonly Known* and *Expert Identified* conditions, randomly assigned one subject to receive a vignette containing the uncommonly known item of information. Each subjects read their assigned vignette, completed a brief quiz testing their comprehension of the

decision tasks and background information, and then returned the vignette to the experimenter. Next, if the round was assigned to the *Expert Identified* condition the experimenter identified the subject whose vignette contained the uncommonly known item of information.

Subjects then discussed the decision in their group until they either reached consensus or indicated to the experimenter that they did not wish to discuss any longer. Discussion was required to last at least two minutes and was capped at twenty minutes, though only three groups hit this upper limit; mean discussion time was five minutes, 25 seconds. After discussion, groups voted on which option to choose using a secret ballot; the vote was decided by majority rule. The experimenter counted the votes, announced the decision, and then administered a post-discussion questionnaire. Once the post-discussion questionnaire was complete, the experimenter determined which option would turn out to be correct by rolling a 10-sided die, such that if both items of predictive information favored the same option that option had an 80 percent chance of being correct, while if the two items of predictive information favored different options each option had a 50

In this task you must decide to endorse one of two candidates for county commissioner. Each person wants to endorse the candidate who will go on to win the election. However, each person also leans towards one of the candidates. You lean towards Mark Jones.

Candidate 1: Mark Jones

Mark Jones was born in Mercerville, a small town in the western portion of the county. His mother, a school teacher, impressed upon him from an early age the importance of education. He graduated from Mercerville High School and attended American University in Washington DC on an Air Force ROTC scholarship. He served five years in the Air Force, including combat missions during the first Gulf War.

After leaving the Air Force he attended Georgetown Law School and returned to the area to set up practice in Springfield, the major city in the county. Jones has served two terms on the County Commission. He ran for state legislature last year, losing in the primary to former mayor of Springfield. Jones has been married for 14 years to fellow lawyer Diane Reading, with whom he has three children.

Jones launched his campaign for county commissioner last February, and has already shown strong fundraising skills. He has used his connections on the county commission to raise money. Jones is supported by a number of local politicians, including the town's Prosecutor and the former County Commissioner. **You have information that the Springfield Shopper, the highest circulation daily newspaper that reaches about three quarters of the county's population, has decided to endorse Jones. The candidate receiving this endorsement has won in two of the last three elections for county commissioner.** *The other members of the group are not aware of this endorsement.* Jones's campaign slogan is "Preserving a Better Tomorrow." He plans on focusing on his experience on the county commission, as well as his long-standing ties to the area.

Candidate 2: Tom Davies

Tom Davies was born in Cedar Springs, a blue-collar suburb of Springfield. His father, a machinist, taught him the value of hard work and dedication. After graduating from Springfield High School he enlisted in the Army, serving for 8 years and rising to the rank of Staff Sergeant. During his service he led troops in Bosnia and Haiti.

Davies earned a Bachelor's degree while in the Army from George Washington University. After leaving the service he earned a law degree from the University of Michigan Law School and then moved back to Springfield and set up his own practice. He won reelection to the City Council twice, resigning last year to mount an unsuccessful campaign for Mayor. Davies is married to Amanda Dyson, a teacher at Springfield High School, and has two children aged 8 and 10.

Davies announced his run for county commissioner in March, and had been quietly raising a considerable number of donation pledges for months before then. **In fact, the committee has learned that Davies has raised \$50,000 to his opponent Mark Jones's \$25,000. Four of the last six candidates who enjoyed this sized fundraising advantage in recent county commission elections have gone on to win.** Davies is running on a platform of "Our county, Our tomorrow." His campaign focuses on his knowledge of Springfield's people and problems, as well as his military service.

Figure 1: Sample Candidate Biographies

percent chance of being correct. At the end of each round, subjects were randomly reassigned to new three-person discussion groups.⁶

After three rounds, subjects completed a post-session questionnaire and were paid. Subjects were paid for only one of the three rounds; this round was randomly selected by a roll of the die at the very end of the experiment. Average earnings were \$23.97, including a \$15 show-up fee.

Measures

To test *HI*, we measure subjects' post-discussion beliefs about whether the option favored by the second item of information would turn out to be correct. After discussion we asked subjects to predict the percentage chance that each of the two options would turn out to be the correct option.⁷ If *HI* is correct, we expect subjects in the *Uncommon Information* condition to assign a lower probability to the option favored by the second item of information than subjects in the *Common Information* condition or the *Expert Identified* condition. Alternately, if the CKE does not affect deliberation, we would expect to see no difference across the three conditions.

Conducting this test requires dividing our sample into two, depending on whether the both items of predictive information favor the same option. In groups where both items of information favor the same option, we expect subjects who take both items into account to assign a very high probability to that option being the correct option; however, *HI* predicts that this percentage will be lower for groups in the *Uncommon Information* condition. In groups where each item favors a different option, we expect subjects who take both items into account to assign a 50 percent probability to each option; however, *HI* predicts that subjects in the *Uncommon Information* condition will assign a lower than 50 percent probability to the option favored by the second item of information. In both situations, finding no difference across experimental conditions would fail to support *HI*.

⁶ These percentages matched the information provided to subjects about the predictiveness of each item of information. Each item of information included text indicating that it correctly predicted the outcome 2/3 of the time. If both items of information were independent of each other and each was correct 2/3 of the time, the compound probability of the outcome predicted by both items is 80 percent.

⁷ The wording of the question, altered slightly to fit each decision task, was "At this point you do not know which option will turn out to be correct. What percent chance do you think each of the two options has of being correct?"

To test *H2*, the hypothesis that groups where some information is uncommon will make lower quality decisions, we need a standard for what the higher-quality decision is in each situation; we use the decision that maximizes the expected sum of subjects' payoffs. In situations where both items of information favor one option that option has an 80 percent chance of turning out being correct. In this case, all subjects' expected payoffs are higher if the favored option is chosen, so the favored option also maximizes the expected sum of subjects' payoffs. In situations where the two items favor different options, each option is equally likely to be correct. In this case, the option that the majority of subjects lean towards maximizes the expected sum of subjects' payoffs. If the CKE affects group decision making (*H2*), then we should expect groups in the *Uncommon Information* condition to make lower-quality decisions than groups in the *Common Information* and *Expert Identified* conditions. Specifically, we expect groups in the *Uncommon Information* condition to choose the payoff maximizing decision less frequently than groups in the *Common Information* and *Expert Identified* conditions.

Results

We first test *H1* by comparing post-deliberation beliefs in *Uncommon Information* condition to post-deliberation beliefs in the *Expert Identified* and *Common Information* conditions. Table 2 shows subjects' post-discussion belief that the option favored by the second item of information would turn out to be the correct option. The first three columns show the mean in groups where both items of information favored the same policy option. In all conditions the mean subject belief was approximately 70 percent; two-sided *t*-tests cannot reject the null hypothesis of no difference between conditions ($p = .70$ for Common Information vs. Uncommon Information, $p = .25$ for Expert Identified vs. Uncommon Information). The second three columns show the mean in each experimental condition in groups where the two items of information favored different options. Once again, there is almost no difference across the conditions ($p = .78$ for Common Information vs. Uncommon Information, $p = .98$ for Common Information vs. Expert Identified). In sum, we find no evidence for *H1*, the hypothesis that

information will be less influential when it is uncommonly known than when it is commonly known.⁸

Experimental Condition	Both Items Favor Same Option			Each Item Favors Different Option		
	Common Information	Expert Identified	Uncommon Information	Common Information	Expert Identified	Uncommon Information
Post-Belief (95% conf int)	.69 (.64, .73)	.71 (.66, .76)	.68 (.64, .72)	.53 (.47, .58)	.49 (.44, .54)	.49 (.44, .54)
N	33	42	40	33	48	48

Table 2: Post-Deliberation Belief That Option Favored by Second Item is Better

To confirm that this null finding can be interpreted as evidence for a negligible effect, we follow the method recommended by Rainey (2014) to test whether the observed effect size is statistically smaller than an effect that would be deemed substantively meaningful.⁹ We implement this test by specifying a meaningful effect size m as the difference between conditions equal to a Cohen's D of .5, or an effect equal to half of the pooled variance of the two conditions.¹⁰ Table 3 shows the estimated difference between conditions, m for the two conditions, and the p -values of a one-sided t -test comparing the difference to m . In three of the four conditions we can reject the null hypothesis of a meaningful effect. The exception is the difference between the *Expert Identified* condition and the *Uncommon Information* condition when both items of information favor the same option; here, while we cannot rule out the null hypothesis of no effect, we likewise cannot rule out the null hypothesis that the uncommonly known information had meaningfully greater influence in the *Expert Identified* condition. Thus in three of

⁸ To ensure that these results are not the result of clustering at the group level we also tested these hypotheses using regression models that clustered standard errors at the group level and a Hierarchical Linear Model which included dummies for each experimental condition at the group level. Neither model found a statistically significant difference between conditions.

⁹ Rainey (2014) observes that social scientists frequently interpret a null finding as evidence that an experimental manipulation had a negligible effect. However, this is not the proper inference to draw, as a test that cannot rule out an effect of zero may also not be able to rule out an effect of important substantive significance. This is particularly true in experiments with relatively small sample sizes. To properly test whether a null finding can be interpreted as an experimental manipulation having a negligible effect, Rainey (2014) suggests selecting an effect size that would be substantively significant (denoted m) and then conduct a test with $\alpha = .05$ against the null hypothesis that the observed effect size is less than m . If this test is statistically significant, investigators can reject the null hypothesis that the manipulation had a meaningful effect.

¹⁰ This level, while admittedly arbitrary, is commonly interpreted as a "medium-sized" effect in psychological studies.

the four comparisons between conditions we not only find no evidence of the CKE, but can reject the possibility that the CKE had a meaningful effect in these discussions.

Conditions Compared	Both Items Favor Same Option		Each Item Favors Different Option	
	Common vs. Uncommon	Expert IDed vs. Uncommon	Common vs. Uncommon	Expert IDed vs. Uncommon
Difference in Means	.011	.037	-.011	.001
<i>m</i>	.065	.071	.083	.082
<i>p</i>	.037	.146	.009	.008
<i>Note: BOLD indicates the difference in means is statistically different from m (one-sided t-test, $\alpha = .05$)</i>				

Table 3: Tests of Negligible Effect

Looking at the quality of decisions finds little support for *H2*. Table 4 shows the percentage of groups that make the payoff maximizing decision in each condition. As is clear, there is little difference between the conditions, with groups in all three condition choosing the income-maximizing decision around three-quarters of the time. A difference of proportion test comparing the percentage of correct decisions similarly finds no difference between any of the conditions ($p = .45$, Uncommon Information vs. Expert Identified; $p = .48$, Uncommon Information vs. Common Information). Just as there is little evidence that uncommonly known information is less influential over individual attitudes, there is little evidence that it is less influential over group decisions.

	Uncommon Information	Expert Identified	Common Information
Percentage	.81	.73	.83
# of Groups	47	45	23

Table 4: Percentage of Groups Choosing Payoff Maximizing Option

Discussion

Study 1 finds no evidence of the CKE in deliberation with interest conflict, and instead finds evidence against a moderately-sized CKE in discussion with interest conflict. Information that is uncommonly known has the same effect on participant's views as the same information when it is commonly known, providing

no support for *HI*. Similarly, groups made roughly the same decisions in each of the experimental conditions. This finding suggests that the CKE literature may have limited relevance for group discussion where discussants have conflicting interests, as in most cases of political deliberation. However, this study takes place in a relatively sterile laboratory environment. Study 2 will address this by attempting to replicate this null finding in a more externally valid field experiment.

Study 2

As a laboratory experiment, Study 1 has several features that may create doubts about its external validity. Study 2 addresses these concerns with a field experiment. The experiment took place at a 2011 public forum in a school district held to discuss the district's spending priorities. The district, like many at the time, faced severe cuts in state funding. Since the budget required the approval of the district's voters, the district had a vested interest in soliciting public input on any cuts and demonstrating that it took such input seriously. The forum asked residents to discuss and rank areas of spending where the district was considering making cuts. The experiment embedded in the forum centered around funding for sports teams, one of the 13 funding areas considered for cuts, and the area where we expected attendees to have the clearest conflicting interests.¹¹ We provided attendees with briefing packets that contained pairs of "sample arguments" making the case for and against cuts in each area, and experimentally manipulated the content of these packets so that one pair of arguments about sports teams was commonly known and a second set uncommonly known in each group. We look for evidence of the CKE by comparing the influence of arguments when they are commonly known to arguments that are uncommonly known.¹²

¹¹ Funding for sports teams has a large impact on one group of residents, parents who had or expected to have children on school-sponsored sports teams, and little impact on other residents. Attendees at the meeting reflected this divide: 52 percent of attendees reported either having a child who played school-sponsored sports in the district or thought it was "very likely" that one of their children would in the future, while another 29 percent did not currently have children who plays sports in the district and thought it "Very Unlikely" that they a child of theirs would in the future. Since cuts to sports teams would mean either that some sports teams would be eliminated or that the district would adopt a "pay-to-play" system in which students paid a fee to participate on sports teams, this division shows strong conflicting interests in the decision of how to rank "sports teams" relative to other areas for cuts.

¹² As in Study 1, this experiment contained an additional manipulation, the results of which are reported in Myers (2017). In this manipulation, the interest of the subject who knew the uncommon item of information before deliberation began was randomly assigned to be either in the majority or

Attendees at the meeting were a far more diverse group than the student sample typically encountered in laboratory experiments. Further, instead of the induced interests present in the laboratory experiment the parents, teachers, and taxpayers attending the meeting had a real interest in the outcome of the discussion, an interest they showed through their willingness to give up several hours of their time to engage in discussion with their fellow citizens. Finally, these discussions were based primarily on information that these citizens brought to the table, not vignettes created by the experimenter. The manipulated information, the “sample arguments” were also drawn from arguments presented during earlier discussions of these issues, giving them greater ecological validity. Combined, these factors make this field experiment a more externally valid test of whether the CKE affects political deliberation.

Method

Experimental Design

Subjects were 80 area residents who showed up the public meeting. Upon arrival, subjects were placed in groups of five. Each group was tasked with prioritizing seven areas of spending where the school district might make budget cuts. All groups discussed the area of “sports teams.” Subjects’ briefing packets contained a brief description of each area of spending that they would be asked to prioritize as well as two or four “sample arguments” for each area. Arguments were paired, such that each pair of arguments contained one argument that favored cuts in the area and one argument that opposed cuts in the area.

In each group we randomly assigned one argument pair about sports teams to be commonly known and one argument pair to be uncommonly known. The commonly known argument pair was listed in the briefing packet for all five group members. The uncommonly known argument pair was listed in the briefing packet of only one group member. The argument pairs for sports teams were as follows:

minority in terms of his or her interest. There was no interaction effect between this and the manipulation analyzed in the present paper.

- Pair 1 Pro-Cut: “Other organizations in the community already offer the ability to play some sports, and students could participate there;”
- Pair 1 Anti-Cut: “Reducing the number of sports played in the district would reduce the ability of students to choose a sport that really interests them;”
- Pair 2 Pro-Cut: “This change does not directly affect classroom instruction, which should be the focus of the district;”
- Pair 2 Anti-Cut: “Reducing the number of students who get to participate in sports would hurt their ability to develop healthy fitness habits and self-esteem.”

We test *H1* by comparing the influence of commonly known arguments to the influence of uncommonly known arguments.

Procedure and Decision Task

When subjects arrived at the forum they completed a pre-discussion survey that asked them to rank seven areas where spending might be cut, including the area of “sports teams.” After filling out the survey, attendees were placed in one of two categories: Attendees who ranked sports teams one through four were categorized as being in favor for cutting sports teams, while those who ranks sports teams five through seven were categorized as being opposed to cutting sports teams. To create interest conflict we randomly assigned subjects to five-person groups in which at least two members of the group favored cutting sports teams and at least two members of the group opposed cutting sports teams. This ensured that each group had interest conflict on the topic of cutting sports teams.

After taking the survey, subjects were given their briefing packet and taken to their table by a research assistant. Research assistants encouraged participants to read their briefing books; this encouragement was repeated in the pre-discussion presentations. The forum began with a 30-minute presentation by the district superintendent outlining the budget challenge that the district faced and the areas where the district was considering cuts, followed by a five-minute presentation providing instructions for discussion. Forum attendees then discussed the areas in their assigned groups for between one and two hours and ranked the seven areas they were assigned to discuss in the order which they thought that cuts should be made. Once the group finished, its members completed a post-discussion survey.

Measures

We measure the influence of common and uncommonly known information using self-reported measures of argument influence. In the laboratory experiment we could use the change in subjects' opinions as a measure of information's influence because the experimental manipulation was expected to produce different post-discussion opinions in different experimental conditions. However, in the field setting we sought to minimize the impact of the experimental manipulation on subjects' post-discussion opinions out of ethical concerns about affecting the outcome of the forum. We achieved this by using balanced pairs of arguments (one pro- and one con- as the common and uncommonly known information. While the use of self-reports is not ideal, it was a necessary trade-off for the external validity provided by the field setting.

We employ three measures of argument influence for each of the four arguments about sports teams. The post-discussion survey presented attendees with each of the arguments about sports teams and asked them the following battery of questions about each argument:

Some people say that [Argument Text]

1. How much thought have you given this claim tonight?
[4] A great deal of thought [3] Some thought [2] Not much thought [1] No thought/Never heard this claim
2. How important is this claim to deciding how to rank the area of sports teams?
[4] Very important [3] Somewhat important [2] Somewhat unimportant [1] Not important at all
3. Please indicate how much you agree or disagree with this claim.
[5] Strongly agree [4] Somewhat agree [3] Neither agree nor disagree [2] Somewhat disagree [1] Strongly disagree

Results

If the CKE affected deliberation at this forum, we would expect arguments that were not common knowledge to score lower than arguments that were common knowledge on some or all of the three measures of influence described above.

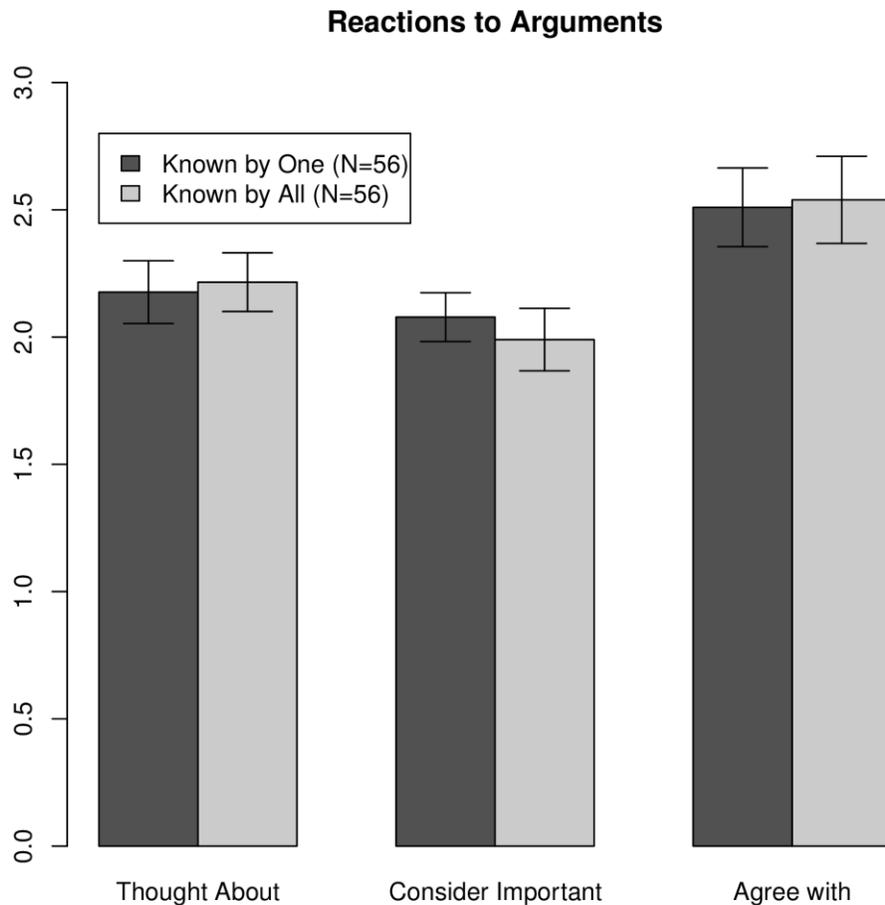


Figure 2: Post-Discussion Reactions to Common and Uncommon Information

Figure 2 shows the mean response to these three statements for the pair of arguments that was known by all members of the group and the pair of arguments that were known by only one member of the group. As Figure 2 shows, there is little difference on any of the measures. Regardless of whether an argument was known by only one member of a deliberating group or known by all members of the deliberating group before discussion began, deliberators report having thought about it the same amount, considered it equally important, and agreed with it to the same degree. Statistical tests confirm this, with Wilcoxon Exact Tests finding no

statistical difference for any of the three measures ($p = .83$ ‘thought about’; $p = .49$ ‘consider important’; $p = .92$ ‘agree with’).

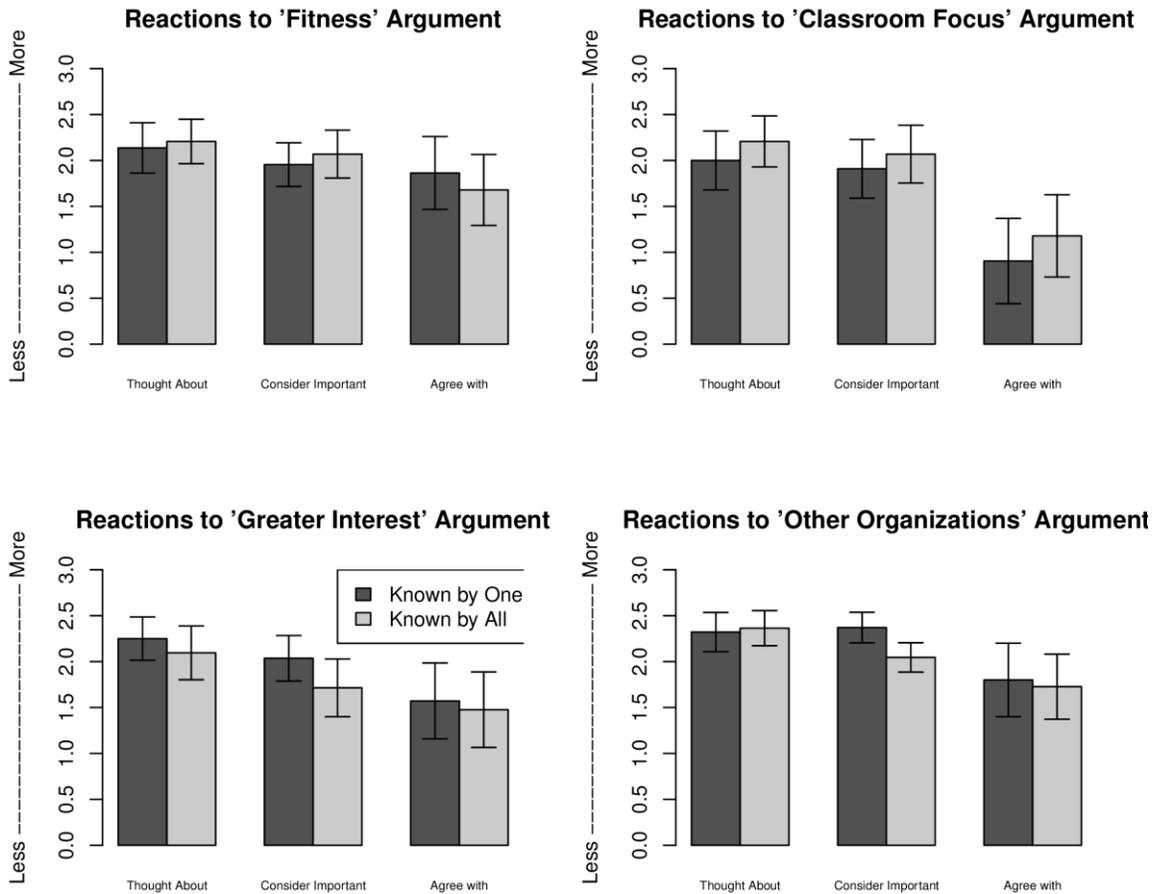


Figure 3: Post-Discussion Reactions to Individual Arguments

To confirm these that these results do not obscure a CKE that affects only one or a few of the sample arguments, we compare reactions to each of the four sample arguments across experimental conditions. Figure 3 replicates Figure 2 for each of the four sample arguments. Again, we see no sign that items were more influential when they were common knowledge than when they were uncommon knowledge. Only one of these comparisons reveals a statistically significant difference, with the “Other Organizations” argument considered more important in groups where only

one member knew the argument than in groups where all members knew the argument $p = .04$. This is the wrong direction for the CKE hypothesis.

Finally, as in Study 1 we test whether we can reject the null hypothesis that there is a meaningful difference between conditions by specifying an effect size m equal to a Cohen's D of .5, and testing whether we can reject the null hypothesis that the experimental manipulations had an effect equal to or greater than m . For each measure of influence, Table 5 shows the difference in means between conditions, m , and the p -value from a one-sided t -test that tests whether the mean difference is statistically different from m . For all three measures of influence, we can reject the null hypothesis of a meaningful effect of the experimental manipulation.

	Thought About	Consider Important	Agree With
Difference in Means	.029	-.088	.020
m	.349	.322	.474
p	.011	.001	.009
<i>Note: BOLD indicates the difference in means is statistically different from m (one-sided t-test, $\alpha = .05$)</i>			

Table 5: Tests of Negligible Effect

Discussion

This study looked for evidence of the CKE in a more realistic environment than Study 1 by embedding arguments in the briefing materials of citizens participating in a public forum, with some arguments appearing in the briefing materials of all deliberators and some arguments in the briefing materials of only one deliberator. $H1$ predicts that the uncommonly known arguments would be discussed less, and have less influence over deliberator's thinking on the issue, than commonly known arguments. However, deliberators report thinking about, considering important, and agreeing with the uncommonly known arguments as much as the commonly known arguments. We cannot reject the null hypothesis of no difference between commonly known and uncommonly known arguments, but we can reject the null hypothesis that there was a meaningful difference between conditions, suggesting that this finding of no difference is not an artifact of the study's small sample size.

This study makes several sacrifices in terms of internal validity in order to present a more realistic field test of the CKE. To enhance external validity, the sample arguments that this study uses as common and uncommon information are arguments that might already be present and salient in the minds of deliberators. This means that the null finding might be a result of contamination - “uncommonly known” arguments might be known by deliberators who were not assigned to know them before discussion began. This concern may be partially alleviated by the fact that none of the four arguments showed evidence of the CKE. The null finding might also be a result of the weakness of the treatment; particularly when compared to the treatment in Study 1, subjects in Study 2 entered deliberation with a great deal more information about the topic, and thus the impact of the informational treatment might be too small to detect. Finally, the measure of influence relies on post-deliberation self-reports, which is far from ideal. These are not insignificant challenges to the internal validity of this study. As such, these results should be viewed as a replication of Study 1’s findings, rather than dispositive proof in their own right. The fact that these results come from an experiment embedded in a real political forum where citizens deliberated about issues that were of great importance to them make these results an important extension of Study 1’s findings.

Conclusion

In theory and practice, deliberation depends on the sharing of novel information. This has led some scholars to view the CKE as a serious threat to the viability of small group discussion as a deliberative institution (e.g. Sunstein, 2006). Group deliberation affected by CKE would fail to create a more informed citizenry, would produce inferior decisions, and would inadvertently silence those deliberators who brought important but uncommonly known information to the table. However, political deliberation is different from the group discussion studied in classic CKE experiments because political deliberators generally bring conflicting interests to the table. Recent theoretical and empirical work suggests that disagreement in groups about how to achieve a shared goal can provide motivation that can overcome the CKE; however, existing work does not test whether disagreement created by conflicting interests can also eliminate the CKE.

This paper provides some evidence that deliberating groups with conflicting interests are not affected by the CKE. In its examination of information sharing in

two studies of group discussion with interest conflict, this paper finds no evidence that commonly known information is more influential than uncommonly known information. This is true whether our measure of influence is the change in attitudes, group decisions, or self-reports of how influential deliberators found the arguments. While this finding is a null finding, employing the procedure suggested by Rainey (2014) can give us greater confidence in interpreting this as evidence against a meaningfully large CKE, and not merely the absence of evidence in favor of the CKE. Given the ubiquitousness of interest conflict in political deliberation, this finding suggests that the CKE may not in fact be one of the “Big Problems” (Sunstein, 2006) facing deliberative democracy.

This finding also suggests that conflicting interests can be a resource for quality deliberation rather than an obstacle, a suggestion that has important implications for the organization and facilitation of deliberative mini-publics. For example, some deliberative facilitators specifically discourage self-interested statements, or statements that seek to introduce the interests of one’s group into deliberation (Mansbridge et al., 2006). While such statements may disturb group harmony, they may also play an important role in overcoming the CKE. On the other hand, many facilitation strategies explicitly eschew a search for a “common good” or consensus about goals, and instead aim at seeking “common ground,” a sense of commonality that encourages divergent perspectives on an issue and “accommodate[s] both conflict and consensus” (Mansbridge et al., 2006, p. 22; see also Walsh, 2007). Establishing “common ground,” may be a more useful foundation for deliberation than a shared “common good,” as over-emphasizing the degree to which deliberators share common goals can harm deliberation by removing a factor that can encourage thorough information search and sharing. Disagreement caused by conflicting interests can be painful for deliberators, but these results show that such disagreement can be a key element for deliberation’s success.¹³ This practical benefit of conflicting interests also has implications for the theoretical debate about the role of self-interest in deliberation (Mansbridge et al., 2010) pointing out a hitherto unrecognized positive consequence of permitting self-interest to play a role in deliberation.

¹³ This is in line with Fung’s (2003) suggestion that “hot deliberations with participants who have much at stake make for better deliberation.”

The lack of evidence for the CKE in this setting suggests that future work on public deliberation should pay more attention to motivational factors affecting information use in deliberation. Wittenbaum et al. (2004) and De Dreu et al. (2008) argue that dissenting opinions in groups with a common goal reduce the influence of the CKE because they change the motivations underlying group discussion. In particular, De Dreu et al. (2008)'s Motivated Information Processing in Groups (MIP-G) model, which divides motivations for group information processing into pro-social and epistemic factors, offers a useful theoretical framework for understanding how motivation affects group information processing (see also Nijstad & De Dreu, 2012). The studies presented in this paper do not measure or manipulate groups' motivation; nevertheless, it seems plausible that the introduction of conflicting interests changes the constellation of motivations driving group discussion. Other aspects of political deliberation beyond the presence of conflicting interests likely also affect groups' motivations to process information; scholars might find it fruitful to think about the design of deliberative institutions from a motivational perspective.

References

- Benhabib, S. (1996). Toward a deliberative model of democratic legitimacy. In S. Benhabib (Ed.), *Democracy and Difference: Contesting the Boundaries of the Political*, (pp. 67–94). Princeton: Princeton University Press.
- Cruz, M. G., Boster, F. J., & Rodríguez, J. I. (1997). The impact of group size and proportion of shared information on the exchange and integration of information in groups.” *Communication Research*, 24, 291–313.
- Curşeu, P. L., Schruijer, S. G. L., & Boroş, S. (2012). Socially rejected while cognitively successful? The impact of minority dissent on groups’ cognitive complexity. *British Journal of Social Psychology*, 51, 570–582.
- De Dreu, C. K. W., Nijstad, B. A., & van Knippenberg, D. (2008). Motivated information processing in group judgment and decision making. *Personality and Social Psychology Review*, 12(1), 22–49.
- Delli Carpini, M. X., Cook, F. L., & Jacobs, L. R. (2004). Public deliberation, discursive participation, and citizen engagement: A review of the empirical literature. *Annual Review of Political Science*, 7(1), 315–344.
- Fung, A. (2003). Recipes for public spheres: Eight institutional design choices and their consequences. *Journal of Political Philosophy*, 11, 338–367.
- Gigone, D., & Hastie, R. (1993). The Common Knowledge Effect: Information sharing and group judgment.” *Journal of Personality and Social Psychology* 65(5).
- Greitemeyer, T., Schulz-Hardt, S., Brodbeck, F. C., & Frey, D. (2006). Information sampling and group decision making: The effects of an advocacy decision procedure and task experience. *Journal of Experimental Psychology: Applied*, 12, 31–42.
- Gutmann, A., & Thompson, D. (2004). *Why Deliberative Democracy?* Princeton: Princeton University Press.
- Klemp, N. J., & Forcehimes, A. T. (2010). From town halls to wikis: Exploring Wikipedia’s implications for deliberative democracy. *Journal of Public Deliberation*, 6(2), Article 4.
- Lu, L., Yuan, Y. C. & McLeod, P. L. (2012). Twenty-five years of hidden profiles in group decision making: A meta-analysis. *Personality and Social Psychology Review*, 16, 54–75.
- Mansbridge, J., Bohman, J. Chambers, S., Estlund, D. Føllesdal, A., Fung, A., Lafont, C., Manin, B., & Martí, J. L. (2010). The place of self-interest and

- the role of power in deliberative democracy. *Journal of Political Philosophy*, 18, 64–100.
- Mansbridge, J., Hartz-Karp, J. Amengual, M. & Gastil, J. (2006). Norms of deliberation: An inductive study. *Journal of Public Deliberation*, 2(1), Article 7.
- Meirowitz, A. (2006). Designing institutions to aggregate preferences and information. *Quarterly Journal of Political Science*, 1, 373–392.
- Mendelberg, T. (2002). The deliberative citizen: Theory and evidence. In M. X. Delli Carpini, L. Huddy, & R. Y. Shapiro (Eds.), *Political Decision Making, Deliberation and Participation*, Vol. 6. (pp. 151–193). New York: Elsevier.
- Mojzisch, A., Grouneva, L. & Schulz-Hardt, S. (2010). Biased evaluation of information during discussion: Disentangling the effects of preference consistence, social validation and ownership of information. *European Journal of Social Psychology*, 40, 946–956.
- Myers, C. D., & Mendelberg, T. (2013). Political deliberation. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *Oxford Handbook of Political Psychology* (2nd ed.) (pp. 699–736). New York: Oxford University Press.
- Myers, C. D. (2017). Interests, information, and minority influence in deliberation. *The Journal of Politics*, 79, 804–22.
- Nijstad, B. A., & De Dreu, C. K. W. (2012). Motivated information processing in organizational teams: Progress, puzzles, and prospects. *Research in Organizational Behavior*, 32, 87–111.
- Parks, C. D., & Cowlin, R. (1995). Group discussion as affected by number of alternatives and by a time limit. *Organizational Behavior and Human Decision Processes*, 62, 267–275.
- Rainey, C. (2014). Arguing for a negligible effect. *American Journal of Political Science*, 58, 1083–1091.
- Ryfe, D. M. (2005). Does deliberative democracy work? *Annual Review of Political Science*, 8, 49–71.
- Schulz-Hardt, S., Brodbeck, F. C., Mojzisch, A., Kerschreiter, R. & Frey, D. (2006). Group decision making in hidden profile situations: Dissent as a facilitator for decision quality. *Journal of Personality and Social Psychology*, 91, 1080–1093.

- Stasser, G., & Stewart, D. (1992). Discovery of hidden profiles by decision-making groups: Solving a problem versus making a judgment. *Journal of Personality and Social Psychology*, 63, 426–434.
- Stasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology*, 48, 1467–1478.
- Stasser, G., Vaughan, S. I., & Stewart, D. D. (2000). Pooling unshared information: The benefits of knowing how access to information is distributed among group members. *Organizational Behavior and Human Decision Processes*, 82, 102–116.
- Sunstein, C. R. (2006). *Infotopia*. Oxford: Oxford University Press.
- Toma, C., & Butera, F. (2009). Hidden profiles and concealed information: Strategic information sharing and use in group decision making. *Personality and Social Psychology Bulletin*, 35, 793–806.
- Walsh, K. C. (2007). *Talking About Race: Community Dialogues and the Politics of Difference*. Chicago: University of Chicago Press.
- Wittenbaum, G. N., Hollingshead, A. B., & Botero, I. C. (2004). From cooperation to motivated information sharing in groups: Moving beyond the Hidden Profile Paradigm. *Communication Monographs*, 71, 286–310.

Appendix

Study 1 Experimental Instructions

A research assistant read these instructions to subjects at the start of the experiment, before they were assigned to groups and given a decision task. Subjects were also provided with a hard copy of the instructions for use as reference throughout the study.

Welcome and thank you for participating in this experiment in group decision making. This experiment will consist of three rounds. In each of the three rounds you will be placed in a group of three people. Your group will have to decide between two actions. At the beginning of the round you will read some background information about the decision. You will then discuss the decision with your group. You can take up to 20 minutes to discuss the issue. When you are done discussing, the group will vote on which action to take. The action that receives the support of a majority of the group will be taken.

In this experiment you can earn money in two ways. You will earn money when your group makes a decision that turns out to be better based on a fact that is unknown at the time of the decision. You will also earn money when your group makes a decision that is in line with a personal leaning assigned to you by the experimenter. We will now explain these two ways to earn money in greater detail.

The outcome of each action will depend on a fact that is unknown to your group at the time of the discussion. This fact can take one of two values. While you will not know what this fact will be while you are discussing the decision, you will have some information about what it is likely to be. After your group reaches its decision, the fact will be determined and revealed to your group. The actual fact will be determined randomly, but the chance that the fact takes each of the possible values will be related to the information that you have. You will earn 10 dollars if you chose that policy that is better given the unknown fact and 0 dollars if you choose the policy that is worse given the unknown fact.

For example, in one of the tasks you will have to decide between two candidates to endorse for public office. If your group chooses the candidate that wins the election, everyone in the group will earn 10 dollars; if your group chooses the candidate who loses the election everyone in the group will receive 0 dollars. Your group will not know which candidate will win the election; however, you will have some information about which candidate is more likely to win the election. After your group reaches a decision, the winner of the election will be decided and the candidate who your information indicates is more likely to win will be more likely to win the election.

In addition to earning money by your group choosing an action that is in line with the unknown fact, you can earn money by choosing an action that is in line with your personal leanings. Each person in your group will be assigned a leaning towards one of the actions. This leaning will be randomly assigned by the experimenter, and you will be told the leanings of each member of your group before the discussion begins. The leanings will have no relationship with the unknown fact; in other words, the fact that you lean towards one action does not mean that it is more likely to be the better policy, it simply means that all things being equal you prefer that action more than participants who lean in the opposite direction. You are not restricted to voting or arguing in favor of the action you lean towards; you should only do so if that is the action you want the group to take. If the group chooses the action that you lean towards, you will earn 5 dollars in addition to the money you earn for choosing a policy that is better under the unknown fact. If the group chooses the other action you will earn 0 dollars in addition to the money you earn for choosing a policy that is better under the unknown fact. Your earnings depend only on the group decision, and not directly on how you personally vote.

Consider again the candidate endorsement example from earlier. Each member of your group will lean towards one candidate or the other, and you will be told who leans towards which candidate. The fact that you lean towards one of the candidates does not mean that candidate is more likely to win the election, and you are not restricted to voting for or arguing for that candidate. If the group chooses to endorse the candidate you lean towards and that candidate wins the election you will earn 15 dollars. If the group chooses the candidate you lean against and that candidate wins the election you will earn 10 dollars. If the group chooses the candidate you

lean towards and that candidate loses the election, you will earn 5 dollars. If the group chooses the candidate you lean against and that candidate loses the election, you will earn 0 dollars.

Before you discuss the decision, you will read some background information about the decision. The background information will include some items of information that all members of your group are aware of. Additionally, one member of your group will be given some information that only he or she is aware of. If you are the person with this information, this will be clearly indicated in your background information.

After your group makes its decision you will be asked to complete a questionnaire about the discussion. Once all of the groups reach a decision and complete the questionnaire you will be reassigned to new groups. You will never be in a group that is tasked with making a decision that you have already made. In addition, once you are in a group with a person, you will not be assigned to another group with that person. No person in your new group will know anything about how you acted in the last group. You will always be in a group with new members

Once all groups have completed all three decisions, you will complete one final questionnaire and be paid. You will be paid in the following manner. Everyone will receive a ten-dollar show-up fee, regardless of the decisions you make. In addition, you will be paid for one of the three rounds you participated in; the round you will be paid for will be determined randomly at the end of the experiment. You will be paid in private so that no one will know how much money you earn, and you are under no obligation to reveal how much you have earned to anyone.

Does anyone have any questions?

Study 1 Decision Tasks Background Information

Two decision tasks were used in addition to the candidate endorsement task discussed in the body of this document. The background information used in these experiments is reproduced in this appendix. As in the candidate endorsement background information the items which are experimentally manipulated are enclosed in brackets.

Decision Task Two: Expand the Sewage Treatment Plant?

*In this task you must decide whether your city should expand its sewage treatment plant. A large corporation is considering building a new factory in your city; if the factory is built the old sewage treatment plant will be too small, but if the factory is not built the city will have trouble paying for the expansion. Each person wants to expand the sewage treatment plant if the factory is going to be built and not expand the plant if the factory is not going to be built. However, each person also leans towards either expanding the plant or not expanding the sewage treatment plant if there is uncertainty. **You lean towards expanding the plant.***

Proctor and Gamble has announced tentative plans to build a new detergent plant in your city, Franklin. The new factory would employ 300 people directly and support many more jobs indirectly. Franklin city leaders are understandably excited at the prospect of this factory being built. However, the new factory would place considerable strain on the city's wastewater treatment facilities. The industrial site is already connected to your city's sewage system, and wastewater from the plant would be treated by the existing wastewater treatment plant. Currently the town generates between four and five million gallons of wastewater a day and its plant has a capacity of five million gallons. The Proctor and Gamble plant would add half a million gallons daily.

The sewage system is at capacity, but has functioned well up to this point. However, adding half a million gallons to the current system would likely result in embarrassing sewage overflows unless the current plant is expanded. City engineers say that the plant can be expanded, though it will be costly. If the new factory is built, the additional jobs and tax revenue will make the cost worthwhile. If the factory is not built the cost would not be recouped.

Proctor and Gamble believes that it can capture a greater domestic market share if it is able to produce goods in this part of the country. Franklin is potentially an attractive site for the new plant because several new highways are set to be built in the area soon. If built, these highways would give the new factory easier access to regional and national markets. However, the projects are far from completion and will require continued investment of federal and state dollars over the next several

years, and uncertain prospect. If the highways are not built, Franklin becomes a much less attractive place for the factory.

The plant will require a sizable number of workers with backgrounds in chemistry, business and machining. Your city has a well-regarded community college that will be able to provide these workers. However, the city's relatively low unemployment rate may make it difficult for the company to recruit the unskilled and semiskilled workers who will make up the bulk of the plant's workforce.

{Proctor and Gamble was recently rejected for a state development tax break that would reduce the cost of building the factory. State records show that of the last 34 tax breaks given to similar industrial projects, 22 have resulted in completed projects. However, projects that are rejected for the grants have only been built 12 out of the last 34 times.}

{The success of the plant depends largely on global trends in demand for detergent products. You have just received a report that says that global demand is down. If demand increases current production facilities will be unable to meet it; however, if demand declines at the current rate the factory will not be necessary and construction will not be completed. A poll of industry analysts shows that roughly two-thirds believe that this trend is likely to continue. The other people do not have access to this report.}

Decision Task Three: Which Snow Plow Contractor?

*In this task your group must decide which snow plow contractor your town should hire. You have the option to hire an experienced but expensive firm or an inexperienced but cheap firm. If the winter proves to have little snow, saving money with the cheap contractor will benefit the town; if the winter is harsh, having an experienced firm plowing the streets will be the better choice. Additionally, each member of the group leans towards one of the contractors. **You lean towards the inexperienced but inexpensive contractor, Perry Landscaping.***

Though it is still far in the future, it is now time for your town to hire a snow plowing contractor for the coming winter. The town has two options: Mathew's Brothers Plowing, an established firm with a long local reputation and Perry

Landscaping, a local landscape architecture firm that is trying to expand its revenue by getting into the snow plowing business. Mathew's Brothers clearly has better equipment and more experience. However, Perry Landscaping's price is significantly lower. If the coming winter has limited snowfall the town can save a considerable amount of money by hiring Perry. However, if there is a great deal of snow going with an ill-equipped and inexperienced contractor could make life difficult for town residents.

Weather patterns in the western and southern parts of your state often predate weather patterns in your part of the state by one year. The past winter season was unusually snowy in the western half of the state, as precipitation levels were above normal. However, the southern part of the state experienced much higher temperatures than normal, resulting in much less snow.

{According to the University of California San Diego El Niño Forecast Center, ocean and atmospheric temperatures suggests that there will be an El Niño this winter. El Niño is a fluctuation in Pacific Ocean currents that produces greatly increased precipitation in your area. If an El Niño happens this winter, it will greatly increase the amount of precipitation, and thus snow, in your area. Lack on an El Niño suggests lower than average snow. Forecasts of El Niño have been correct in seven of the last eleven years.}

Some people in your area rely on the Old Farmer's Almanac, a long time source of folk wisdom that provides long-range weather forecasts. The forecasts are "determined by the use of a secret formula (devised in 1792 by the founder of this Almanac, Robert B. Thomas), enhanced by the most modern scientific calculations based on solar activity, particularly sunspot cycles." This year's almanac predicts slightly more snow than average. Most professionally trained meteorologists argue that the almanac's vague methodology and predictions make its forecasts unusable, and one analysis suggests that they are only 2 percent more likely to be correct than random guessing.

{You have received advanced access to the National Weather Service's long range temperature forecasts for your area. The long range forecast predicts lower than average temperatures for the area this winter. Lower temperatures will result in more snow. Forecasts suggest that there is a 66 percent chance that average

temperatures will be lower than normal, and a 33 percent chance that average temperatures will be higher than normal. *The other people in your group are not aware of this information.* }

Study 2 Instructions and Briefing Materials

The following replicates the text of one of the briefing packets given to subjects in Study 2. The exact formatting is not preserved. These instructions were also replicated in an audio presentation by the experimenter prior to the beginning of discussion.

School District Community Forum

Table: 41 Seat: 1

Thank you for coming to this community forum hosted by the school district. At this forum you will see a presentation about the district's mission, values, and current budget situation. After the presentations, we are going to ask you to discuss, as a group, several areas where the district could make changes that would either cut costs or increase revenues. These decisions are not easy to make, but we hope that through discussion we can get a better idea of what areas are most important to our district.

The goal of this meeting is to have a thorough discussion of these changes with the people at your table. While you may do so any way you like, we suggest the following steps to make sure everyone has a chance to be heard:

1. Start by having each person share their personal ranking of the changes with the group. Take a moment to look at the changes below and decide how you would rank them, or refer to the sheet you filled out as part of the pre-meeting survey.
2. Next, discuss the pros and cons of each of the changes with your group. We suggest that you talk about each proposed change for at least five minutes; you can refer to these briefing materials as you move from area to area. As you discuss the areas, please write down important ideas that your group has on the index cards at the center of the table. Please also rate what you

expect the change's impact on students to be from 1 to 10, where 1 is an extremely positive impact, 5 is no impact, and 10 is an extremely negative impact.

3. When you have discussed each of the possible changes individually, you should start to discuss the changes in relation to each other. At the end of this conversation, please rank the changes from 1 to 7, where 1 is the change that the district should consider first and 7 is the change that the district should consider last. When there is disagreement, please vote by majority rule before assigning a ranking to a change.
4. After your group has finished its discussion we will know what your group thinks about the proposed changes. We also want to know what you, individually think about the proposed changes. When your group is finished discussing, please fill out one of the post-discussion surveys that are in the envelope at the center of the table.

Here are the changes we would like your table to discuss, along with sample arguments in favor of the change and sample arguments opposed to the change.

Sports Teams

Examples: Reduce number of high school sports teams; reduce number of middle school sports teams.

Pro: Other organizations in the community already offer the ability to play some sports, and students could participate there.

Con: Reducing the number of sports played in the district would reduce the ability of students to choose a sport that really interests them.

Pro: This change does not directly affect classroom instruction, which should be the focus of the district.

Con: Reducing the number of students who get to participate in sports would hurt their ability to develop healthy fitness habits and self-esteem.

Class Size

Examples: Create larger class sizes, have fewer class offerings (middle and high school).

Pro: This change could have a large impact on costs.

Con: Larger classes are shown to be worse for student learning.

Share Services

Examples: Create partnerships with other districts to share services for purchasing supplies, share administrators, share busing services, etc.

Pro: Could lead to additional cooperation between districts.

Con: Could lead to these services to be less tailored to the needs of our district.

Restructure School Programs

Examples: Change media centers into computer centers (fewer books ordered); change team structure at middle school to be more like high school classes; move to purchase E-readers and not textbooks; restructure music lessons and classes.

Pro: Changing to computer centers and e-readers could help students practice computer literacy.

Con: Ordering fewer books leaves students relying on older and out-of-dates sources for projects and papers.

Curriculum Changes

Examples: Reduce costs by reducing compensation to teachers for updating curriculum during the summer; curriculum changes to be absorbed by administration.

Pro: Teachers who spend less time updating curriculum might spend more time on other things.

Con: Less frequent updating of the curriculum means that courses are more likely to feature out of date material and will be less in line with new standards.

Corporate Sponsorship

Examples: Increase revenue by grant writing and finding corporate sponsorship of programs and events.

Pro: Could lead to more long-term cooperation with area businesses.

Con: School is one of the few places where students are not surrounded by advertising.

Online Courses

Examples: Consider having online courses for high school students; additional AP courses online.

Pro: Might expand the range of courses available to students.

Con: Online courses are new, and the district does not have a lot of experience with them.